

REMARKS

Claims 1-28 will be pending upon entry of the present amendment. Claims 1, 3, and 7 are being amended. Claims 18-28 are new. Claims 1-8, 12, and 14-16 were allowed. No new matter is being presented.

The Abstract was objected to for informalities that have been corrected in the redlined abstract provided above.

The applicants appreciate the indication that claims 10-11 are directed to allowable subject matter. These claims are not be placed in independent form because, claim 9, from which claims 10-11 depend, is believed to be in condition for allowance as explained below.

Claims 9, 13, and 17 were rejected under 35 U.S.C. § 103 as being unpatentable over McLaughlin in view of U.S. Patent No. 6,606,728 to Aziz.

McLaughlin and Aziz do not teach or suggest the invention recited in claim 9. In particular, claim 9 recites an encoding and decoding process that includes:

encoding each group of four bits of the pattern signal to a five bit code including a fifth final parity bit; and

providing a biphase encoding of the five bit code to produce an encoded word that is written to a hard disk of the hard disk drive.

McLaughlin and Aziz do not teach or suggest providing a biphase encoding of a five bit code produced by encoding four bits of a pattern signal. As recognized by the Examiner, McLaughlin mentions a 4/5 rate encoding scheme without suggesting a biphase encoding. Aziz does not provide the missing teaching. Aziz mentions in the Background section that an input sequence can be encoded into an output code by a biphase coding, and mentions in the Detailed Description that the input sequence can instead be encoded into an output code by either a 2/6 or a 2/8 encoding. In other words, the 2/6 and 2/8 encoding schemes are improved alternatives to the biphase encoding scheme of the prior art. Nothing in Aziz suggest performing a biphase encoding of a code that was obtained during a previous encoding step. Accordingly, one skilled in the art would not be motivated to perform any of the biphase, 2/6, or 2/8 encodings of Aziz on the 5-bit code that results from McLaughlin's 4/5 encoding scheme. Thus, the prior art does not suggest performing a biphase encoding of the five bit code that results from encoding a four bit pattern signal using a fifth final parity bit.

The applicants also disagree with the asserted motivation for combining Aziz with McLaughlin. The Examiner asserts that one skilled in the art would use Aziz to modify McLaughlin's M/N encoder because Aziz "further improves coding gain in the medium." Aziz is stating that improved coding gain results from replacing the prior art biphasic encoding scheme with a block encoding scheme that uses a 2/6 or 2/8 encoding rate. As a result, Aziz is actually teaching away from modifying McLaughlin by using the prior art biphasic encoding scheme. Without any motivation for combining Aziz with McLaughlin, the obviousness rejection cannot be sustained.

For the foregoing reasons, claim 9 is nonobvious in view of cited prior art.

Although the language of claims 13 and 17 differs from that of claim 9, the allowability of claims 13 and 17 will be apparent in view of the above discussion.

New claims 18-24 depend on allowed claim 12, and thus, are also in condition for allowance.

New claims 25-26 and 27-28 depend on claims 13 and 17, respectively, and thus are allowable for the reasons expressed above. In addition, claims 25-26 and 27-28 include language that is very similar to claims 10-11, which the Examiner indicated to be allowable.

The Director is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090.

All of the claims remaining in the application are now clearly allowable. Favorable consideration and a Notice of Allowance are earnestly solicited.

Respectfully submitted,

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